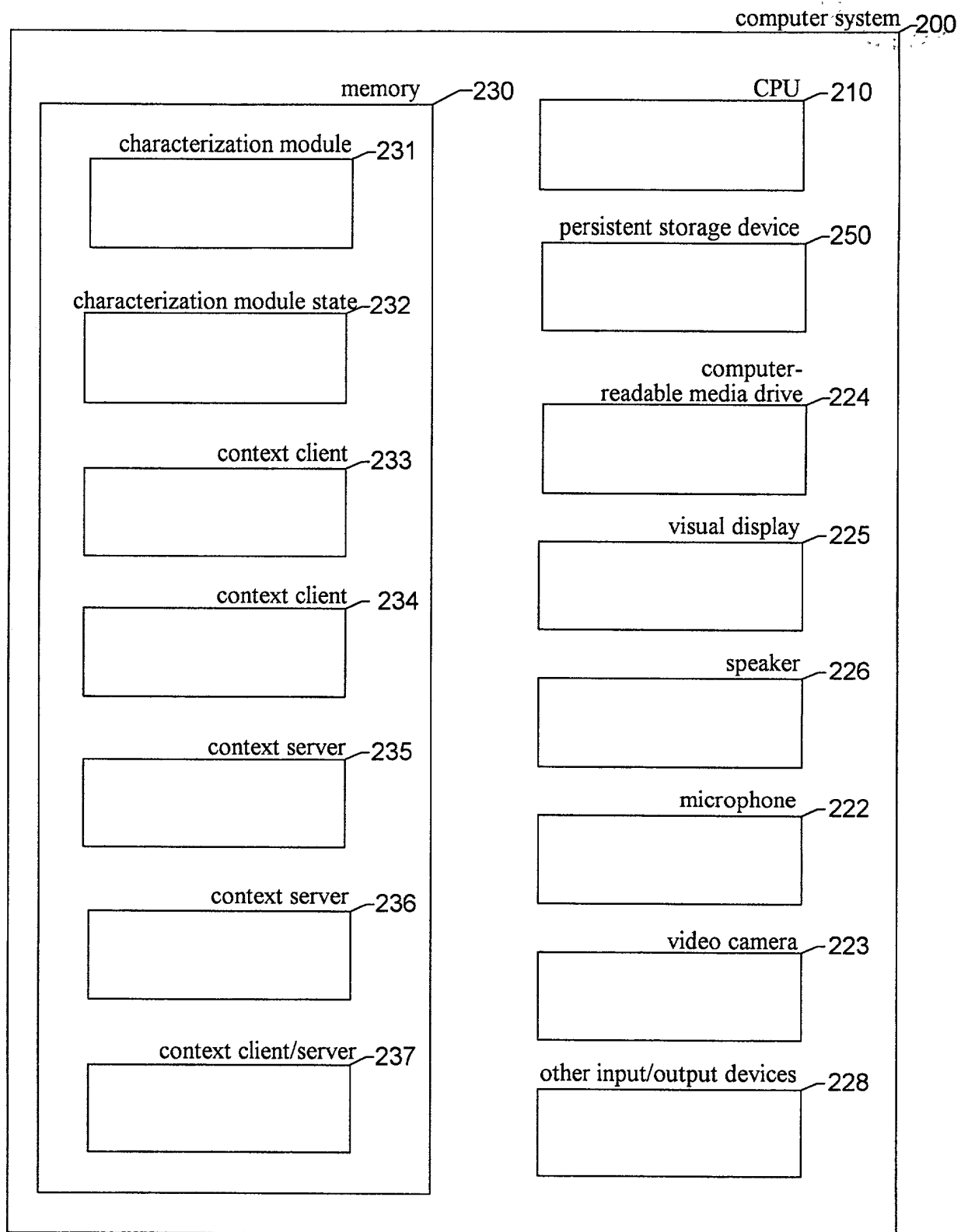
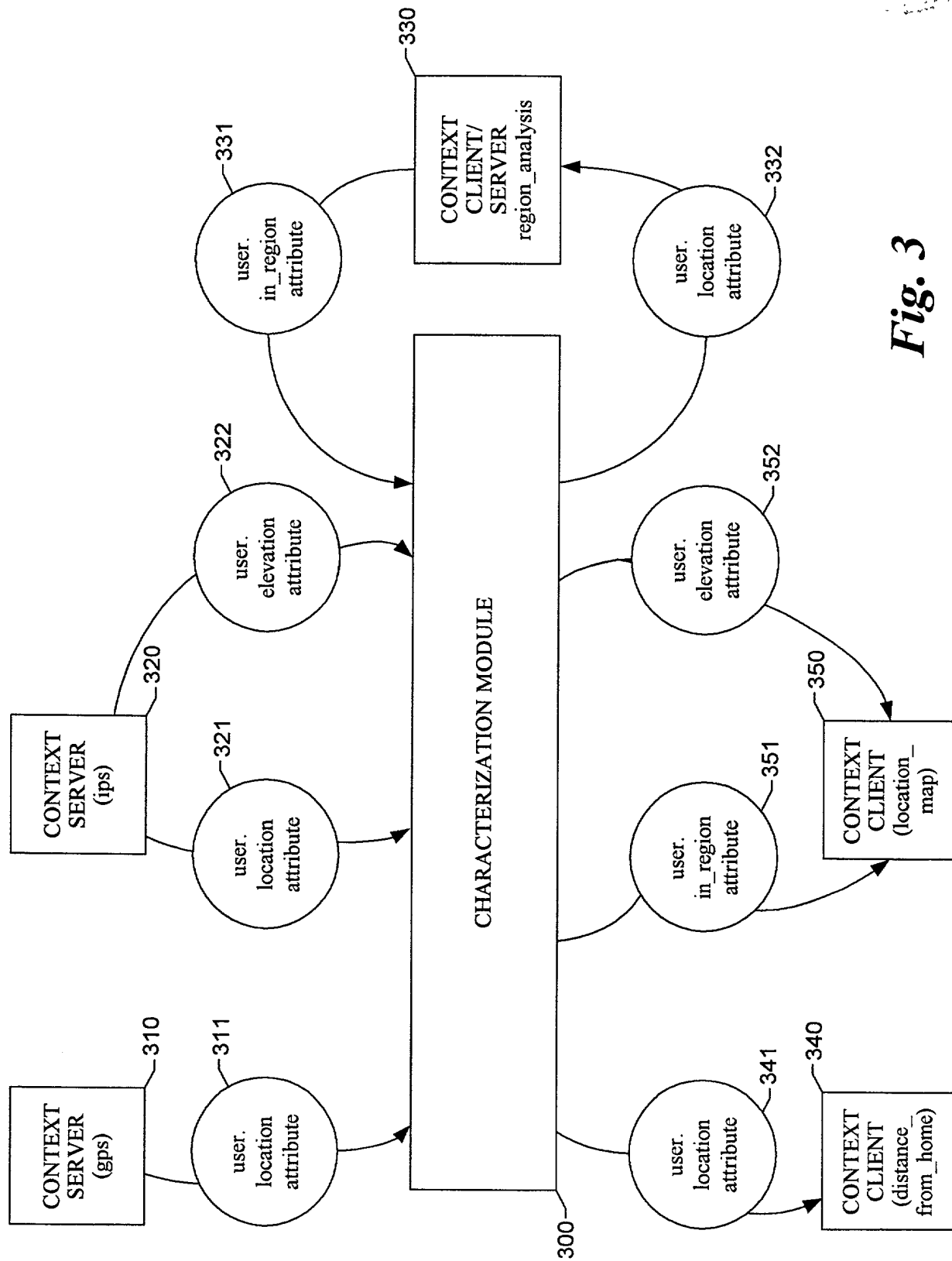


Fig. 1

102090" 84682950



**Fig. 2**



**Fig. 3**

context server table 400				
context server name	version	installation date	filename	request handler
401 gps	1	2/10/2000	gps.exe	(reference)
402 ips	1	2/21/2000	ips.exe	(reference)
403 location_region_analysis	1	2/10/2000	l r_a.exe	(reference)
411		412	413	415

Fig. 4

attribute instance table						
attribute name	context server name	value	uncertainty	timestamp	units	number of context clients consuming
501 user.location	gps	47° 38.73' N, 122° 18.43' W	0° .09'	13:11:04.023 2/22/2000	degrees/minutes	2
502 user.location	ips	47° 38.745' N, 122° 18.424' W	0° .021'	13:11:01.118 2/22/2000	degrees/minutes	2
503 user.elevation	ips	22	.5	13:11:01.118 2/22/2000	meters	1
504 user.in_region	location_region_analysis	none	none	none	none	0
511		512	513	514	515	516
517						

Fig. 5

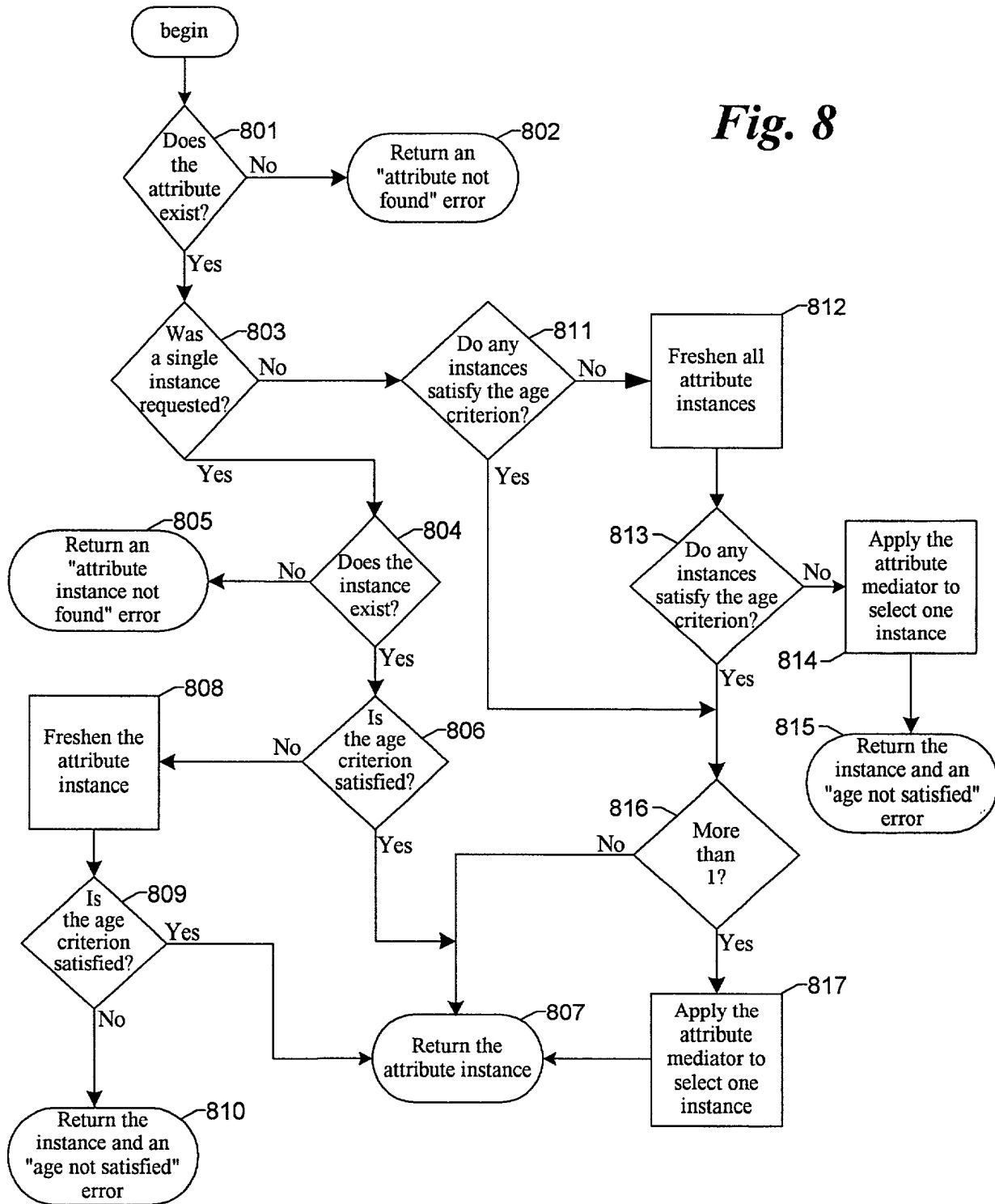
600	context client table	
	context client name	message handler
601	location_map	(reference)
602	distance_from_home	(reference)
603	region_analysis	(reference)
	611	612

Fig. 6

700	attribute instance table						
	attribute name	context server name	value	uncertainty	timestamp	units	number of context clients consuming
701	user.location	gps	47° 38.73' N, 122° 18.43' W	0° .09'	13:11:04.023 2/22/2000	degrees/minutes	2
702	user.location	ips	47° 38.745' N, 122° 18.424' W	0° .021'	13:11:01.118 2/22/2000	degrees/minutes	2
703	user.elevation	ips	22	.5	13:11:01.118 2/22/2000	meters	1
704	user.in_region	location_region_analysis	none	none	none	none	1
	711	712	713	714	715	716	717

Fig. 7

**Fig. 8**



900	attribute name	context server name	value	uncertainty	timestamp	units	number of context clients consuming
901	user.location	gps	47° 38.73' N, 122° 18.43' W	0° .09'	13:11:04.023 2/22/2000	degrees/minutes	2
902	user.location	ips	47° 38.745' N, 122° 18.424' W	0° .021'	13:11:01.118 2/22/2000	degrees/minutes	2
903	user.elevation	ips	22.25	.5	13:11:06.565 2/22/2000	meters	1
904	user.in_region	region_analysis	none	none	none	none	1

Fig. 9

1000	condition name	context client name	first logical parameter	second logical parameter	comparison value	logical operator
1001	in_region_true	region_analysis	user.in_region	none	TRUE	=

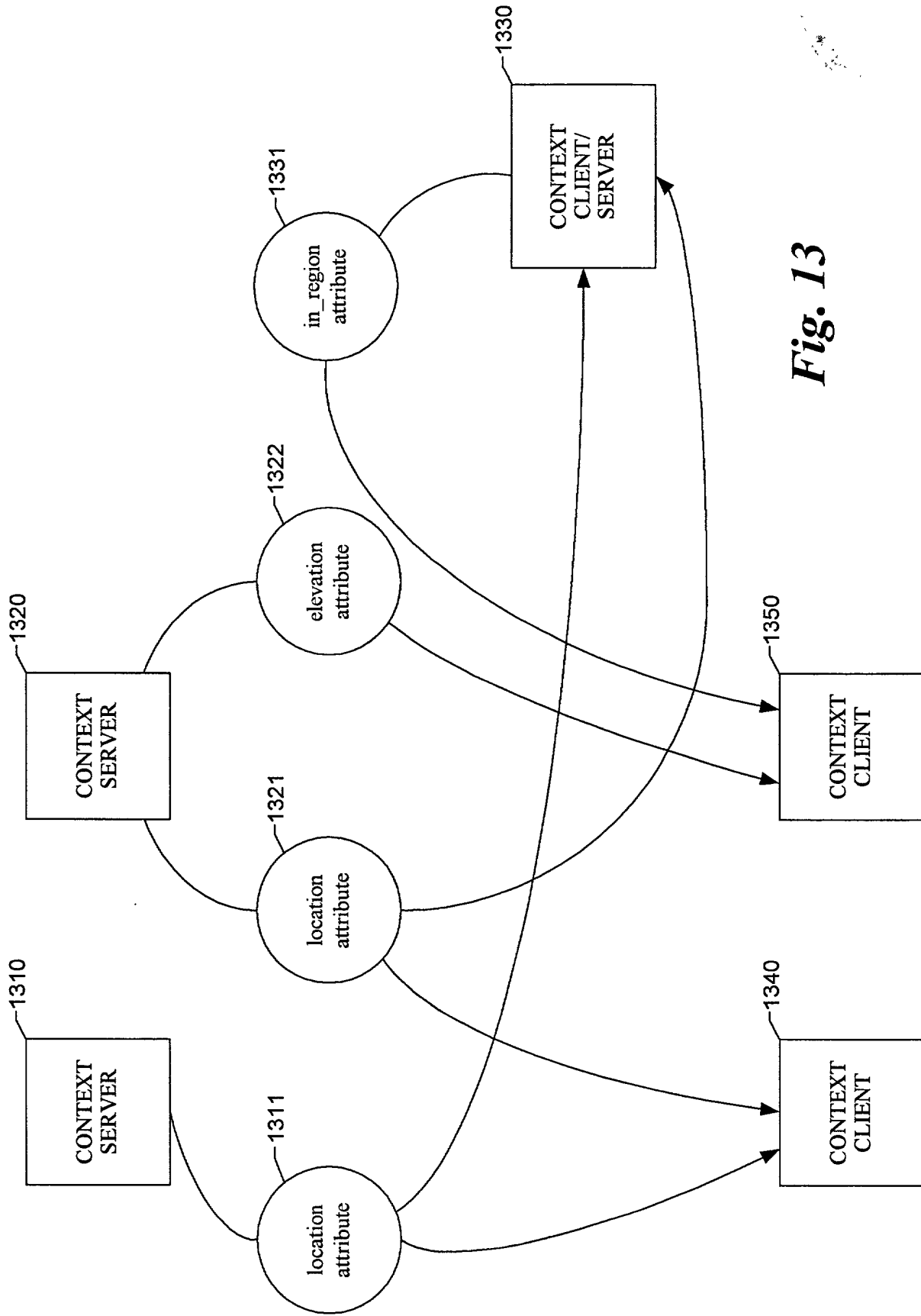
Fig. 10

1100							
	condition monitor name	context client name	condition name	behavior	frequency	condition last evaluated	trigger handler reference
1101	region_boundary_crossed	region_analysis	in_region_true	TRUE or FALSE	30	13:11:29.101 2/22/2000	(reference)
							no
	1111	1112	1113	1114	1115	1116	1117
							1118

Fig. 11

1200							
	condition monitor name	context client name	condition name	behavior	frequency	condition last evaluated	trigger handler reference
1201	region_boundary_crossed	region_analysis	in_region_true	TRUE or FALSE	30	13:11:59.101 2/22/2000	(reference)
							yes
	1211	1212	1213	1214	1215	1216	1217
							1218

Fig. 12



*Fig. 13*

attribute request table	
attribute name	context client name
1401 user.location	distance_from_home
1402 user.in_region	location_map
1403 user.location [gps]	location_region_analysis
1404 user.elevation	location_map

1411

1412

**Fig. 14**

**User.**

Desired\_privacy\_level  
 Interruptibility  
 Speed  
 Direction  
 Acceleration  
 Availability.  
   Cognitive\_availability  
   Tactile\_availability  
   Manual\_availability  
   Visual\_availability  
   Oral\_availability  
   Auditory\_availability  
 Proximity.<Item or place name>  
 Mood.  
   Happiness  
   Sadness  
   Anger  
   Frustration  
   Confusion  
 Activity.  
   Driving  
   Eating  
   Running  
   Sleeping  
   Talking  
   Typing  
   Walking  
 Location.  
   Place\_name  
   Latitude  
   Longitude  
   Altitude  
   Room  
   Floor  
   Building  
   Address  
   Street  
   City  
   County  
   State  
   Country  
   Postal\_Code  
 Destination. (same as User.Location.)  
 Physiology.  
   Pulse  
   Body\_temperature  
   Blood\_pressure  
   Respiration

**Person.**<name or ID>. (same as User.)**Platform.**

## UI.

Oral\_input\_device\_availability  
 Manual\_input\_device\_availability  
 Tactile\_output\_device\_availability  
 Visual\_output\_device\_availability  
 Auditory\_output\_device\_availability

**Platform.** (continued)

## CPU.

Load  
 Speed

## Memory.

Total\_capacity  
 Used

## Storage.

Total\_capacity  
 Used

## Connectivity.

Connection\_status  
 Connection\_speed  
 Connection\_type/device  
 Connection\_activity

## Power.

Power\_source  
 Power\_level

**Environment.**

## People.

Nearest  
 Number\_present  
 Number\_close

## Local.

Time  
 Date  
 Temperature  
 Pressure  
 Wind\_speed  
 Wind\_direction  
 Absolute\_humidity  
 High\_forecast\_temperature  
 Low\_forecast\_temperature  
 People\_present  
 Ambient\_noise\_level  
 Ambient\_light\_level  
 Days.<previous or future>.  
   High\_temperature  
   Low\_temperature  
   Precipitation\_type  
   Precipitation\_amount

Place.&lt;place name&gt;. (same as Environment.Local)

**Application.**

## Mail.

Available  
 New\_messages\_waiting  
 Messages\_waiting\_to\_be\_sent

## Phone.

Available  
 In\_use  
 On/off  
 Notification\_mechanism  
 Call\_incoming  
 Caller\_ID

## Sound\_recorder.

Available  
 Recording

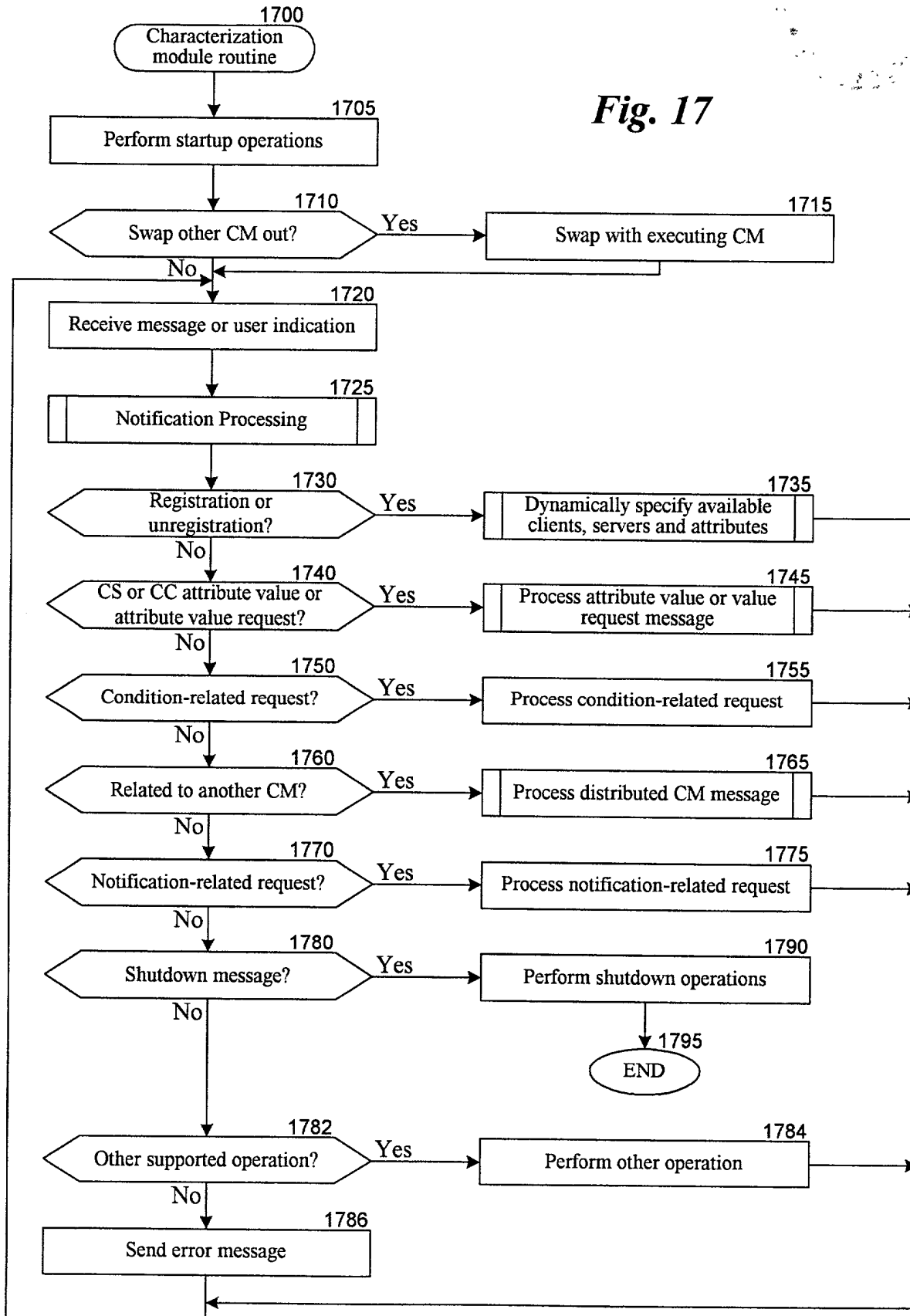
**Fig. 15**

- 1) User Setting
  - a) Mental Context
    - i) Meaning
    - ii) Cognition
      - (1) Divided User Attention
      - (2) Task Switching
      - (3) Background Awareness
    - iii) Solitude
    - iv) Privacy
      - (1) Desired Privacy
      - (2) Perceived Privacy
    - v) Social Context
    - vi) Affect
  - b) Physical Situation
    - i) Body
      - (1) Biometrics
      - (2) Posture
      - (3) Motion
      - (4) Physical Encumberment
        - (a) Senses
          - (i) Eyes
          - (ii) Ears
          - (iii) Tactile
          - (iv) Hands
          - (v) Nose
          - (vi) Tongue
        - (b) Workload demands/effects
        - (c) Interaction with computer devices
        - (d) Interaction with people
        - (e) Physical Health
    - ii) Environment
      - (1) Time/Space
      - (2) Objects
      - (3) Persons
        - (a) Audience/Privacy Availability
          - (i) Scope of Disclosure
          - (ii) Hardware affinity for privacy
          - (iii) Privacy Indicator for User
          - (iv) Privacy Indicator for Public
          - (v) Watching Indicator
          - (vi) Being Observed Indicator
    - (4) Ambient Interference
      - (a) Visual
      - (b) Audio
      - (c) Tactile

- 2) Computer
  - a) Power
  - b) Configuration
    - i) User Input Systems
      - (1) Hand/Haptic
        - (a) Keyboard/Keystrokes
      - (2) Voice/Audio
      - (3) Eye Tracking
      - (4) Cursors
        - (a) Axis
        - (b) Resolution
          - (i) Selection
          - (ii) Invocation
        - (c) Accelerators
    - ii) Output Systems
      - (1) Visual
        - (a) Resolution
      - (2) Audio
        - (a) Public/Private
      - (3) Haptic
    - iii) External Resources
      - (1) I/O devices
      - (2) Connectivity
  - c) Data
    - i) Quantity/State
    - ii) Urgency/Importance
      - (1) Use of Prominence
    - iii) Modality
    - iv) Sensitivity/Purpose
      - (1) Privacy Issues
      - (2) Use of Association
      - (3) Use of Safety
    - v) Source/Ownership
      - (1) Types
        - (a) User generated
        - (b) Other computers or people
        - (c) Sensor
        - (d) PC State
      - (2) Use of Association

**Fig. 16**

Fig. 17



**Fig. 18**

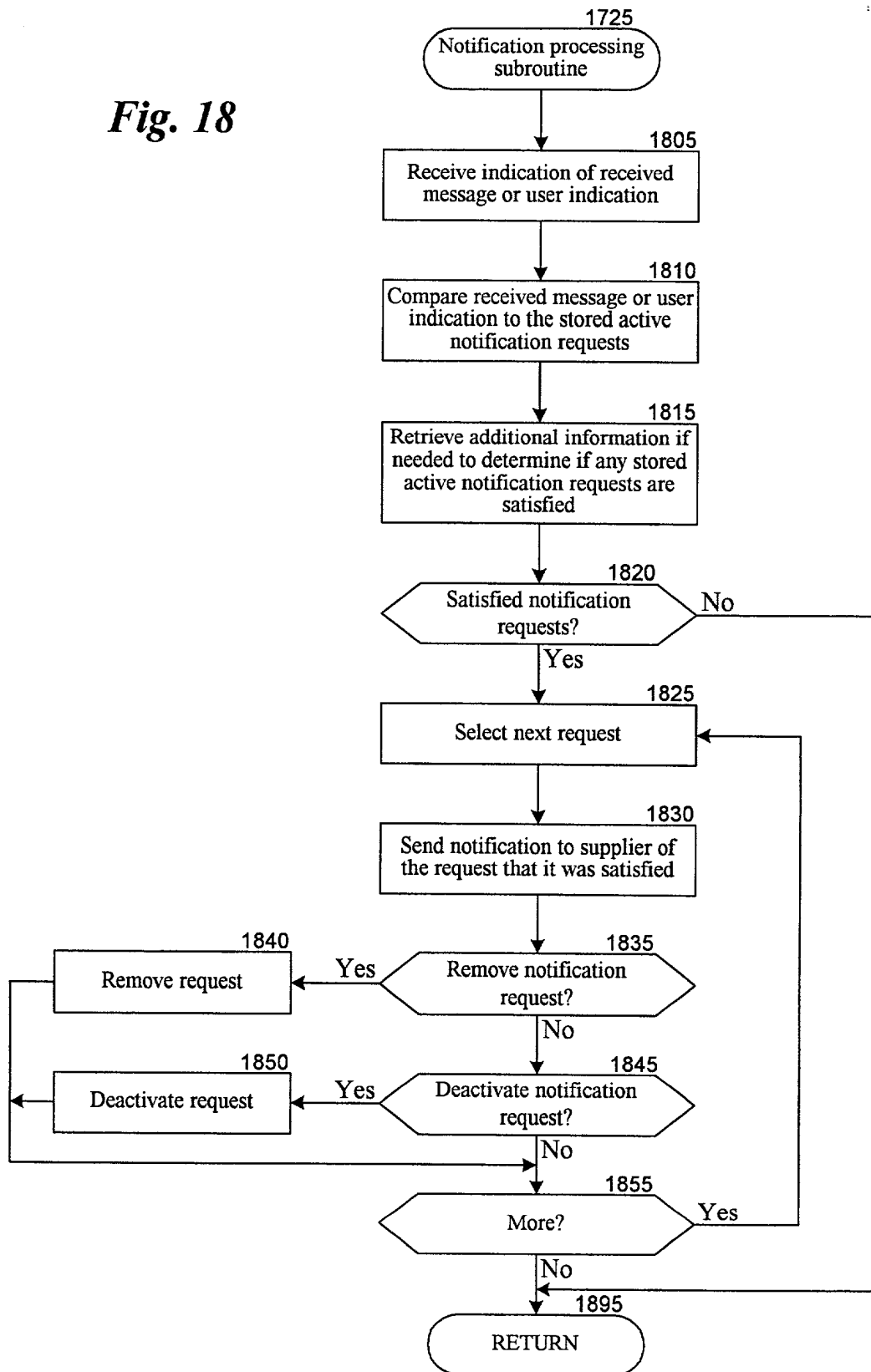


Fig. 19

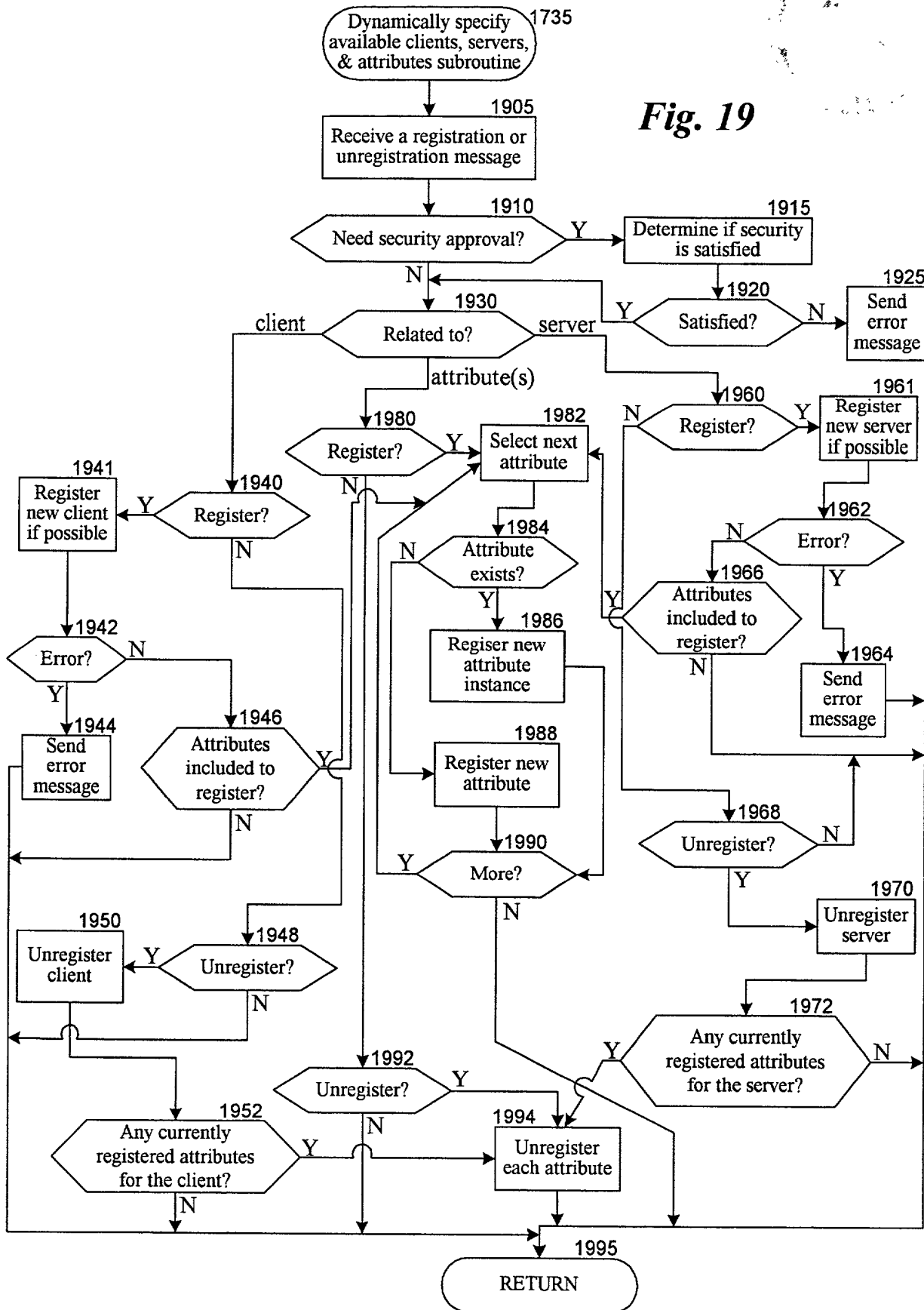
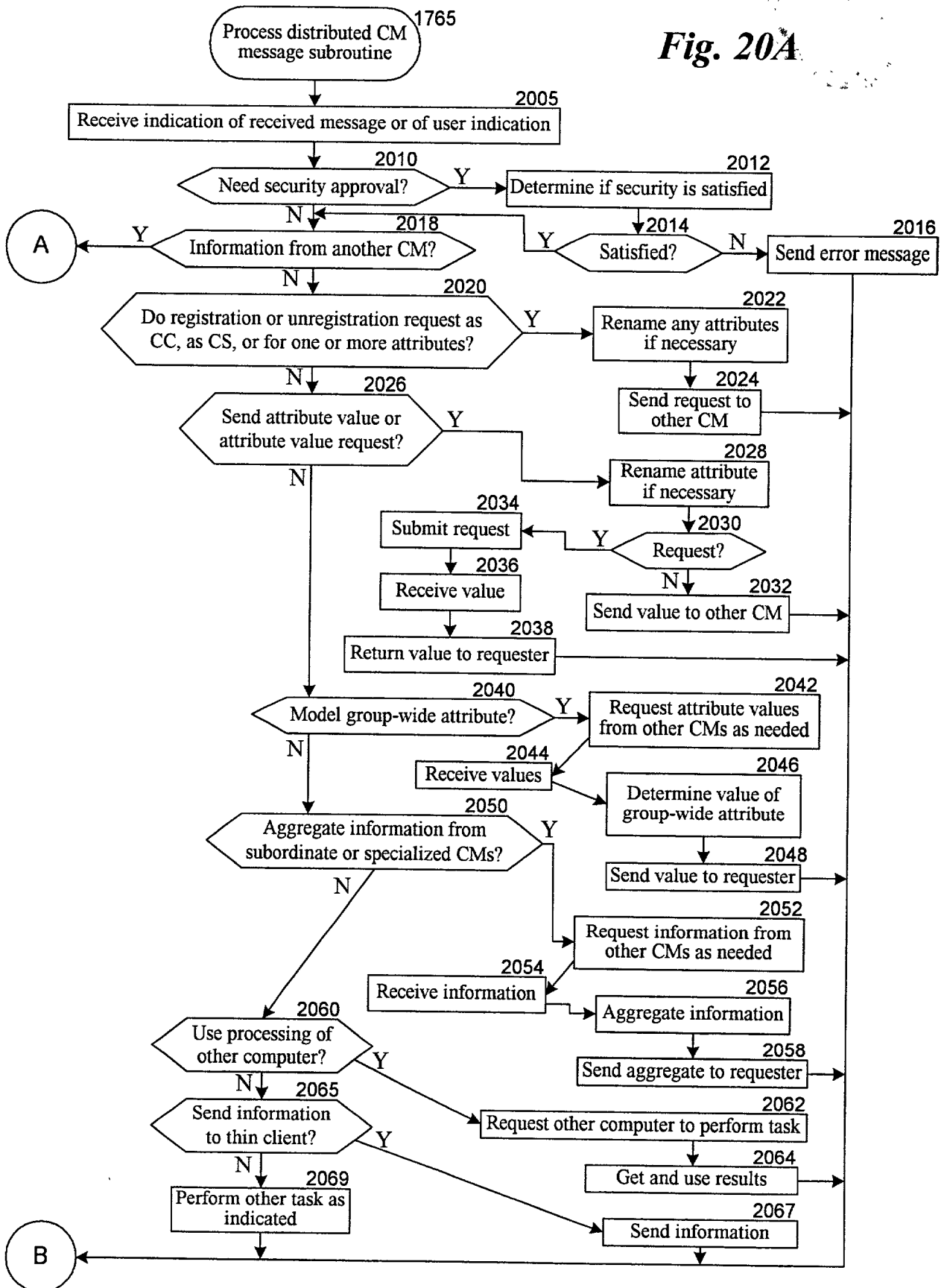
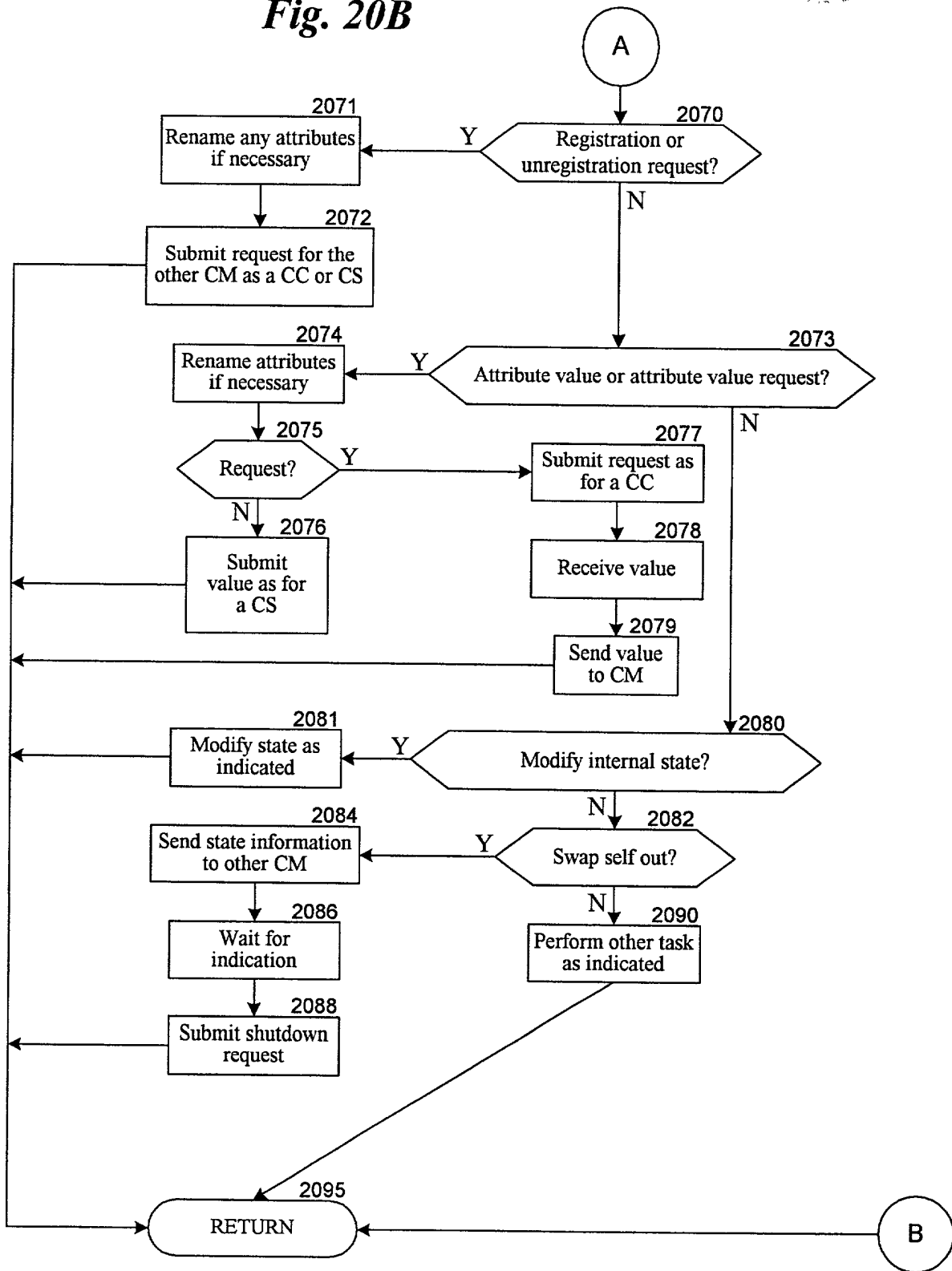


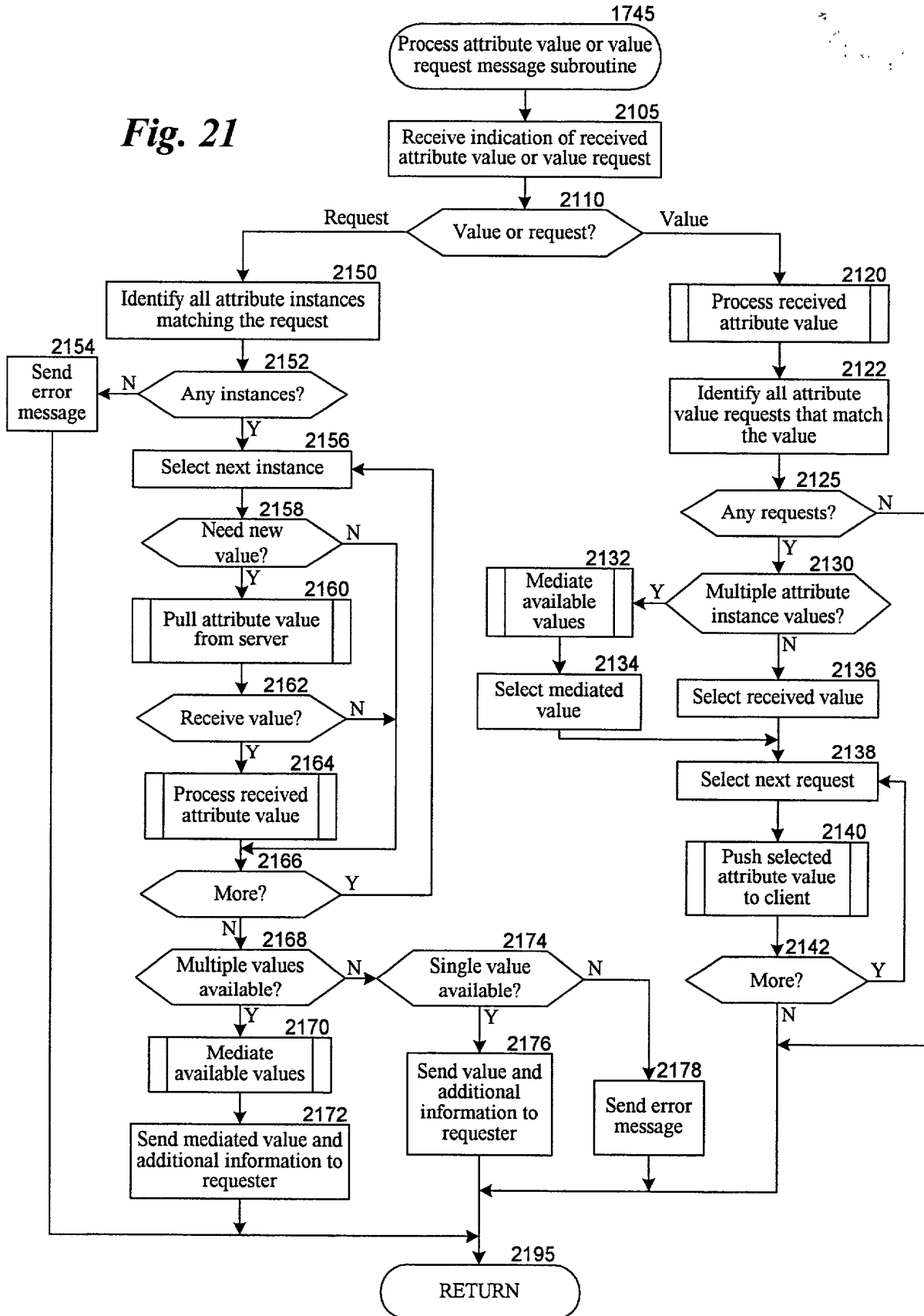
Fig. 20A



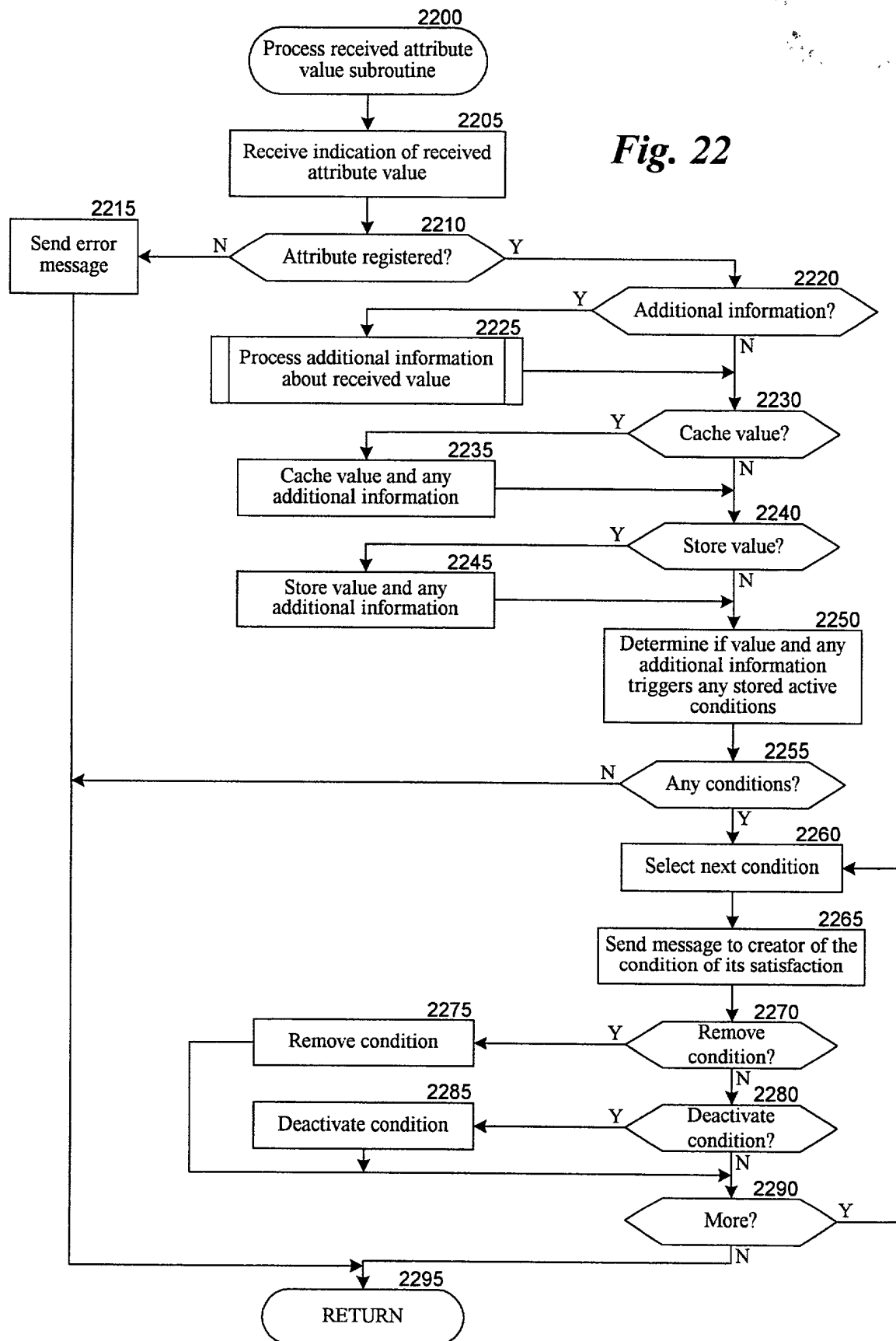
**Fig. 20B**



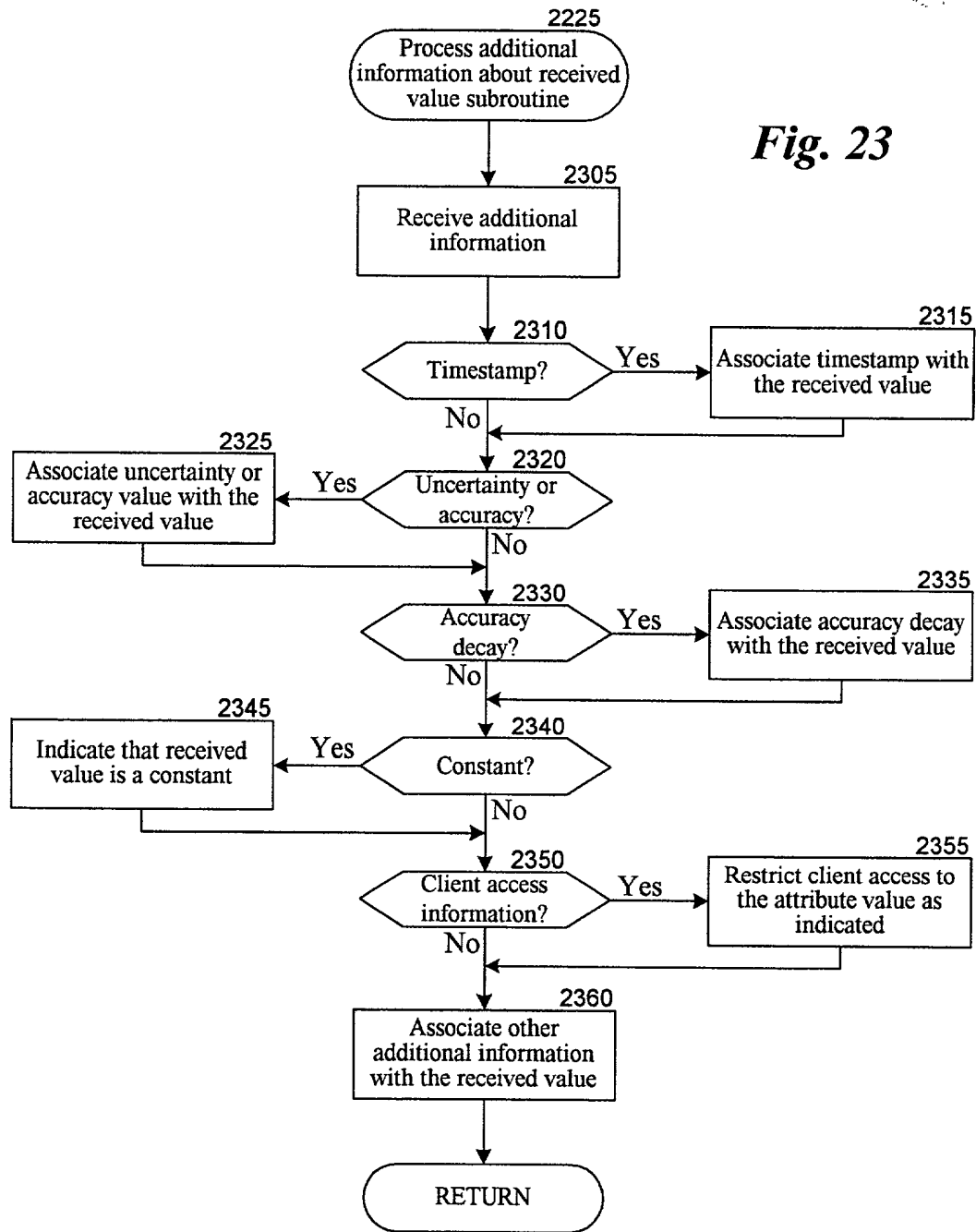
**Fig. 21**



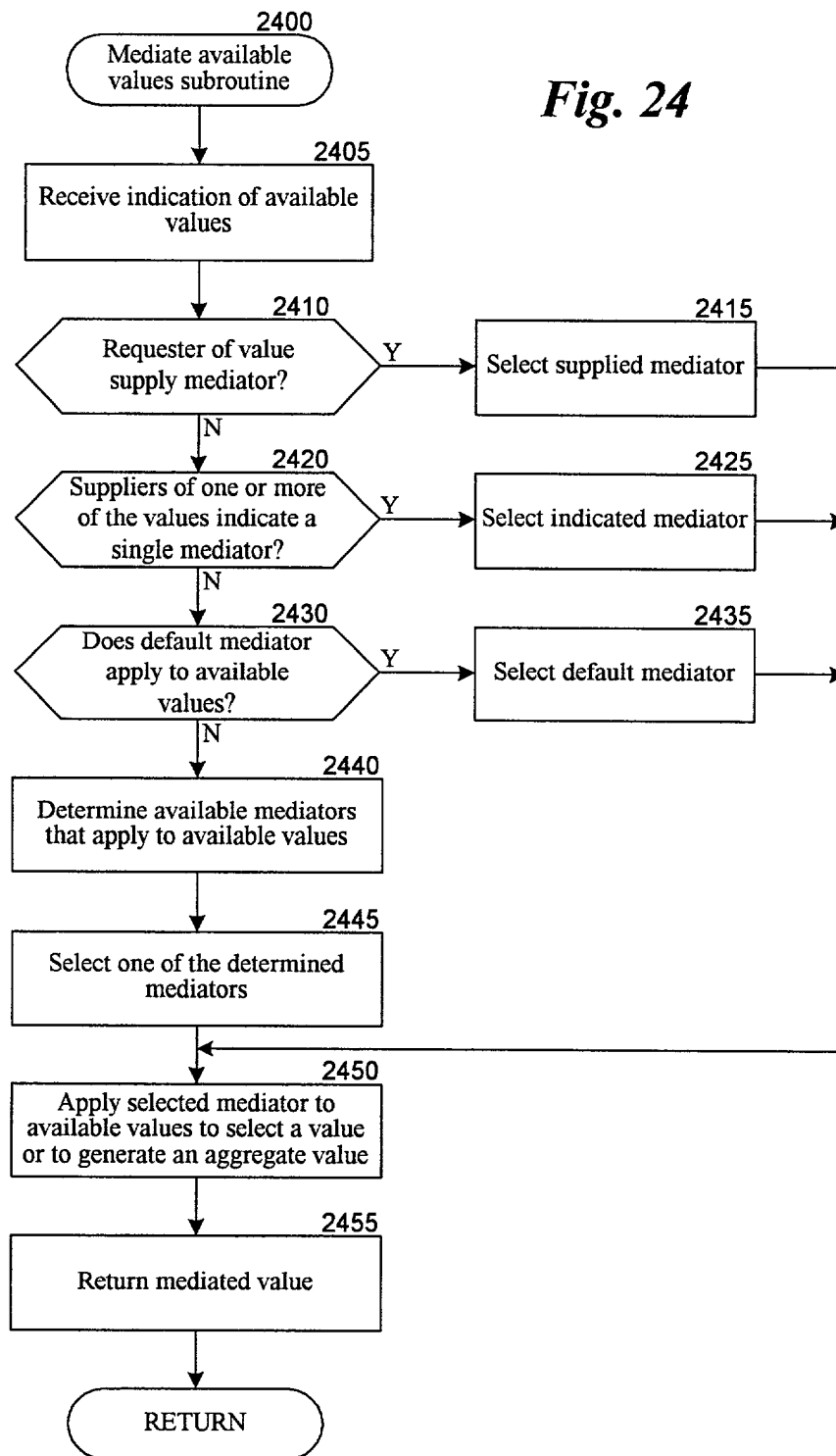
**Fig. 22**

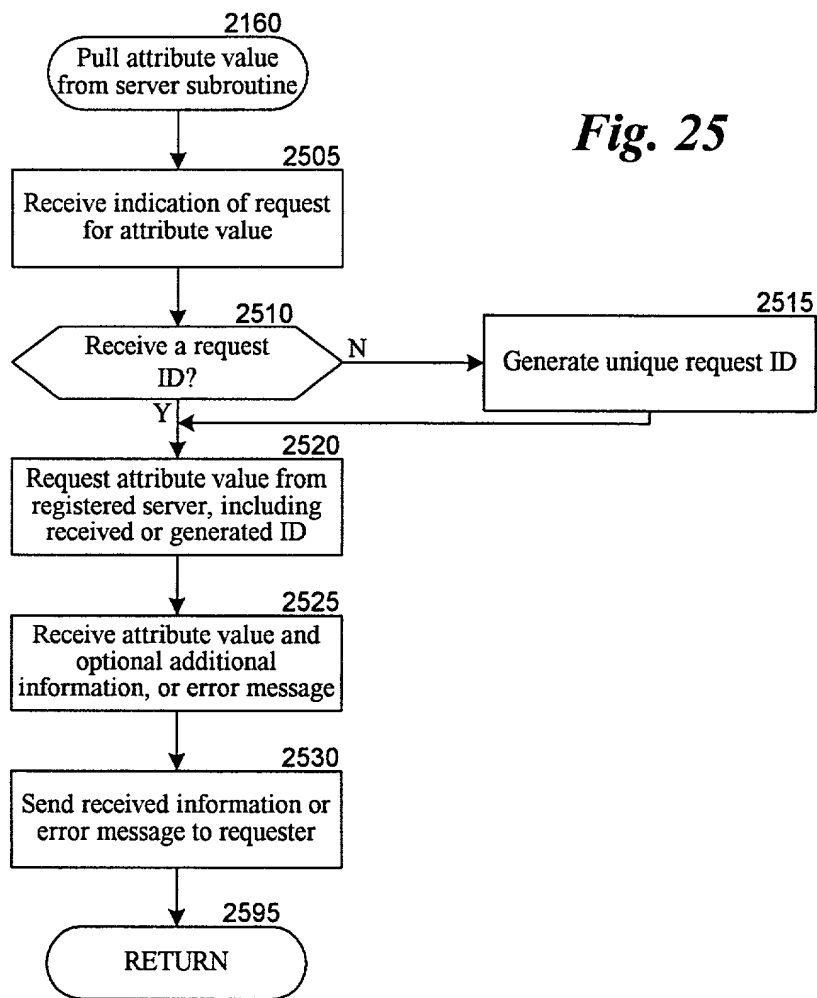


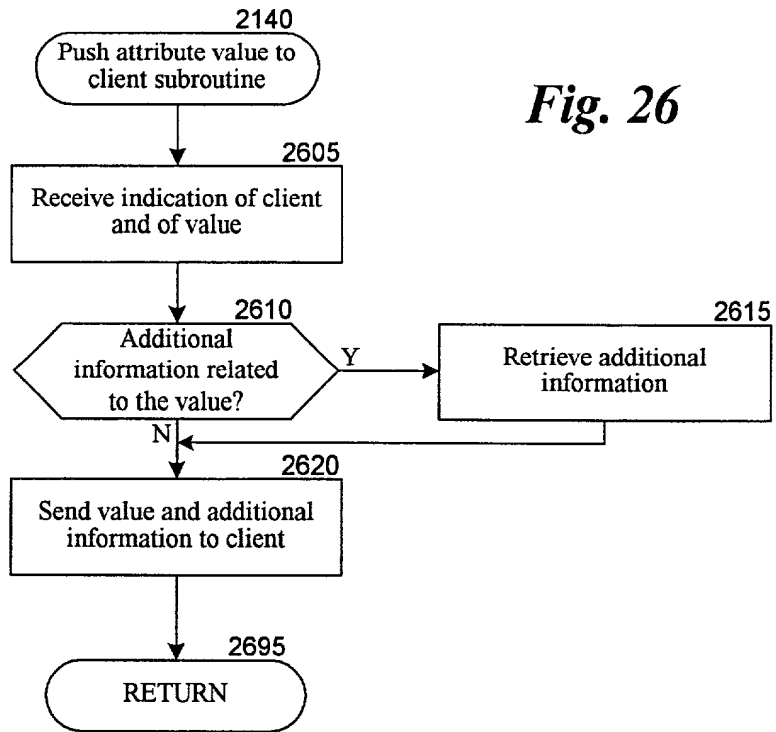
**Fig. 23**



*Fig. 24*







*Fig. 26*

Fig. 27

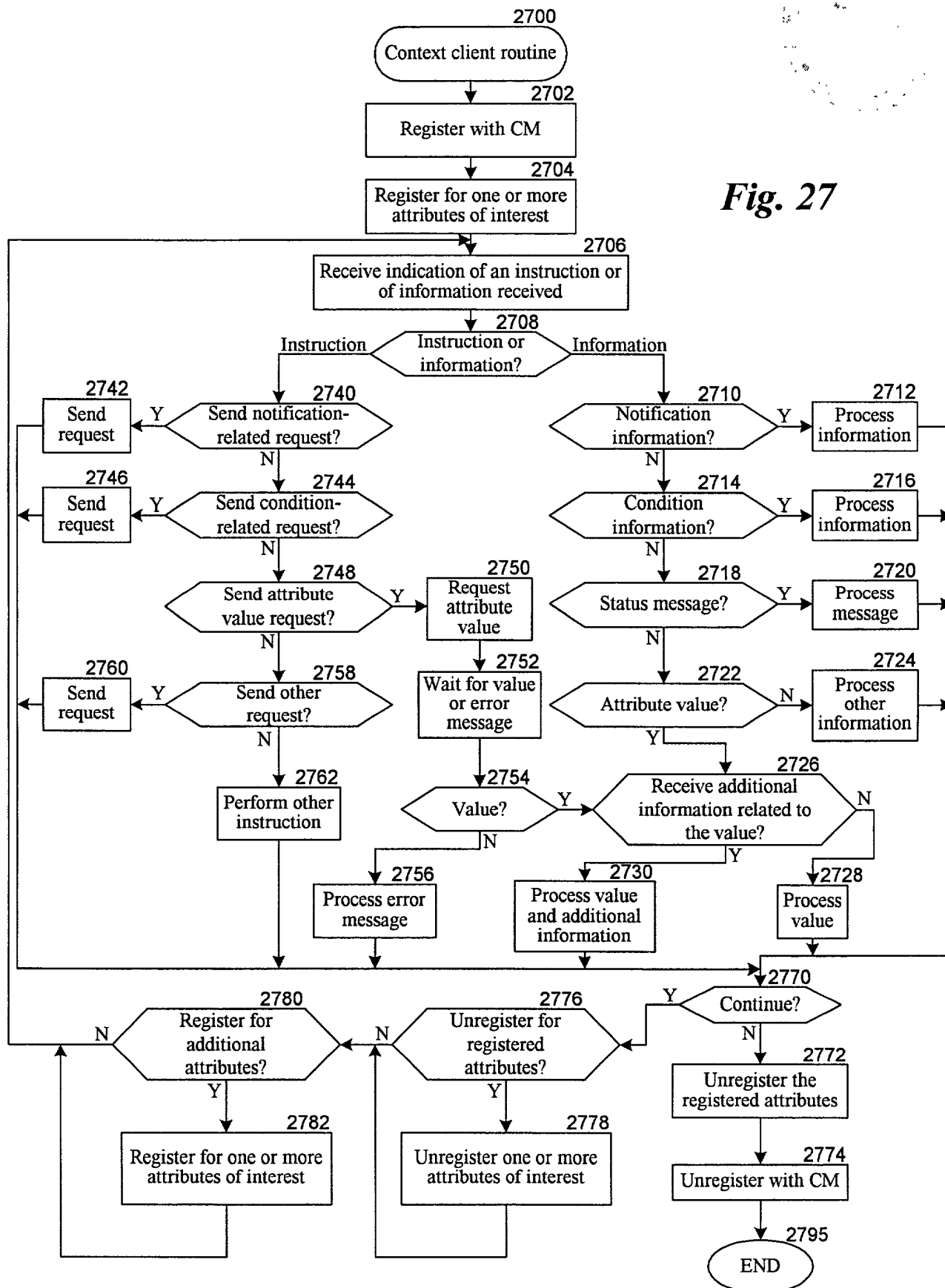


Fig. 28

